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Claims

1. Valve for an aerosol container, the valve comprising a valve body; within said valve body, a sealing ring; and receivable by said sealing ring, a valve stem having a dispensing passage, the valve stem being slidably movable within the sealing ring from a valve-closed position to a valve-open position in which the interior of the valve body is in communication with the dispensing passage, wherein the stem-receiving part of the sealing ring has at least one rounded or shaped edge such as to reduce the contact area between the sealing ring and the valve stem.

5. 2. Valve according to claim 1, wherein the area of contact between the sealing ring and the valve stem is less than 90% of what the area of contact would be if the sealing ring had square-cut edges.

10. 3. Valve according to either of claims 1 or 2, wherein the sealing ring is formable by a moulding process.

15. 4. Valve according to claim 3 wherein the moulding process is injection moulding.

20. 5. Valve according to claim 3 wherein the moulding process is compression moulding.

25. 6. Valve according to claim 3 wherein the moulding process is transfer moulding.

30. 7. Valve according to any of claims 1 to 6, wherein the sealing ring is not movable relative to the valve body.

35. 8. Valve according to claim 7, wherein the sealing ring is held within a cavity in the valve body.

9. Valve according to any of claims 1 to 8, wherein the stem-receiving part of the sealing ring has fully rounded edges.

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10. Valve according to any of claims 1 to 9, wherein the stem-receiving part of the sealing ring presents a lobed surface to the stem.

5 11. Valve according to claim 10, wherein the lobed surface and the stem-receiving part of the stem define one or more wells.

12. Valve according to claim 11, wherein said one or more wells contain lubricant material therein.

10 13. Valve according to any of claims 1 to 12, wherein the valve body has a metering chamber, a sampling chamber and therebetween is provided a second sealing ring within which the stem is slidably movable, the valve stem having a transfer passage such that in the valve-closed position the dispensing passage is isolated from the metering chamber and the metering chamber is in communication with the sampling chamber via said transfer passage, and in the valve-open position the dispensing passage is in communication with the metering chamber and the transfer passage is isolated from the metering chamber, wherein the stem-receiving part of the second sealing ring has at least one rounded or shaped edge such as to reduce the contact area between the second sealing ring and the valve stem.

15 20 25 14. Valve according to claim 13, wherein the area of contact between the second sealing ring and the valve stem is less than 90% of what the area of contact would be if the second sealing ring had square-cut edges.

30 15. Valve according to either of claims 13 or 14, wherein the second sealing ring is formable by a moulding process.

16. Valve according to claim 15 wherein the moulding process is injection moulding.

35 17. Valve according to claim 15 wherein the moulding process is compression moulding.

18. Valve according to claim 15 wherein the moulding process is transfer moulding.

19. Valve according to any of claims 13 to 18, wherein the second sealing ring is not movable relative to the valve body.

5 20. Valve according to claim 19, wherein the second sealing ring is held within a cavity in the valve body.

10 21. Valve according to any of claims 13 to 20, wherein the stem-receiving part of the second sealing ring has at least one rounded edge.

15 22. Valve according to any of claims 13 to 21, wherein the stem-receiving part of the second sealing ring presents a lobed surface to the stem.

20 23. Valve according to claim 22, wherein the lobed surface and the stem-receiving part of the stem define one or more wells.

25 24. Valve according to claim 23, wherein said one or more wells contain lubricant material therein.

20 25. Valve according to any of claims 1 to 24 wherein the sealing ring comprises an elastomeric material.

25 26. Valve according to any of claims 13 to 25 wherein the second sealing ring comprises an elastomeric material.

27. Valve according to claims 25 and 26 wherein the elastomeric material is selected from the group consisting of

30 (a) a thermoplastic elastomer comprising a copolymer of about 80 to about 95 mole percent ethylene and a total of about 5 to about 20 percent mole percent of one or more of 1-butene, 1-hexene and 1-octene;

(b) a styrene-ethylene/butylene-styrene block copolymer;

(c) an ethylene propylene diene rubber (EPDM)

(d) a thermoplastic elastomer blend of EPDM dispersed in a polypropylene or polyethylene matrix;

35 (e) a butyl polyethylene;

(f) a butyl-polypropylene; and any mixtures thereof.

28. Valve according to any of claims 1 to 27, wherein the sealing ring additionally comprises lubricant material.

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29. Valve according to any of claims 13 to 28, wherein the second sealing ring additionally comprises lubricant material.

30. Valve according to any of claims 1 to 29, wherein the stem comprises lubricant material.

31. Aerosol container comprising a valve according to any of claims 1 to 30.

32. Aerosol container according to claim 31 comprising a suspension of a medicament in a propellant.

33. Aerosol container according to claim 32, wherein, the propellant is liquefied HFA134a or HFA-227 or mixtures thereof.

34. Aerosol container according to either of claims 32 or 33, wherein the medicament is selected from the group consisting of albuterol, salmeterol, fluticasone propionate, beclomethasone dipropionate, ipratropium bromide and salts or solvates thereof and any combination thereof.

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